

REMARKS

Claims 12-42 were pending when last examined. With this amendment, Applicants amend Claims 12 and 19. All pending claims are shown in the detailed listing above.

Double Patenting

Claims 12-22, 24-28 and 30-37 stand rejected under 35 U.S.C. § 101 as claiming the same invention as that of Claims 1-11 of prior U.S. Patent No. 6,657,875. The Examiner states, "Claims 12, 19, 24, and 30 the input voltage ratio are $n:m$ and $p:q$ where n , m , p , and q are integer values, when the values are 1, 2, or 3 they become a duplicate claim of the patent claims." Applicants respectfully traverse.

Applicants have amended Claims 12 and 19 to include an additional limitation of "a circuit for automatically assigning the charge pumping system to function in the forward operation mode or the reverse operation mode based at least in part on the input voltage." With such limitation, Claims 12 and 19 are not coextensive in scope with any claims in U.S. Patent No. 6,657,875. Likewise, because Claims 13-18 and 20-22 depend from one of Claims 12 and 19, these dependent claims are also not coextensive in scope with any claims in U.S. Patent No. 6,657,875. As such, Applicants respectfully request that the rejection of Claims 12-22 under 35 U.S.C. § 101 be withdrawn and these claims be allowed.

Each of Claims 24-28 depend from Claim 23 and, as such, include all of the same limitations of "A charge pumping system operable to be connected among a plurality of terminals for functioning in a step-up/step-down operation and, without changing the connection among the plurality of terminals, for functioning in a step-down/step-up operation." Not all of these limitations are present in the claims in U.S. Patent No. 6,657,875, and accordingly, Claims 24-28 are not coextensive in scope with any claims in U.S. Patent No. 6,657,875. As such, Applicants respectfully request that the rejection of Claims 24-28 under 35 U.S.C. § 101 be withdrawn, and these claims be allowed.

Each of Claims 30-37 depends from Claim 29 and, as such, includes all of the same limitations of “A charge pumping system operable to be connected among a plurality of terminals for functioning in a step-up/step-down operation and, without changing the connection among the plurality of terminals, for functioning in a step-down/step-up operation, the system comprising: a switching component operable to regulate the charge pumping system in the step-up/step-down operation and in the step-down/step-up operation; and a circuit for automatically assigning the system to function in the step-up/step-down operation or the step-down/step-up operation based on the respective voltage potentials at the various terminals.” Not all of these limitations are present in the claims in U.S. Patent No. 6,657,875, and accordingly, Claims 30-37 are not coextensive in scope with any claims in U.S. Patent No. 6,657,875. As such, Applicants respectfully request that the rejection of Claims 30-37 under 35 U.S.C. § 101 be withdrawn, and these claims be allowed.

Claim Rejections – 35 USC § 102

Claims 23, 29, and 38-42 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Nork (USPN 5,973,944). Applicants respectfully traverse.

Applicants’ Claim 23 recites, “A charge pumping system operable to be connected among a plurality of terminals for functioning in a step-up/step-down operation and, without changing the connection among the plurality of terminals, for functioning in a step-down/step-up operation.” Similarly, Applicants’ Claim 29 recites, *inter alia*, “A charge pumping system operable to be connected among a plurality of terminals for functioning in a step-up/step-down operation and, without changing the connection among the plurality of terminals, for functioning in a step-down/step-up operation....” These limitations are not disclosed or taught by Nork.

Nork discloses a “switching regulator circuit using a common switch network on a single IC for providing step-up and step-down DC--DC conversion.” See Abstract of Nork. In the switching regulator circuit of Nork, the step-up and step-down conversion always

occurs from node V_{in} to node V_{out} , which is essentially a one-way operation. The switching regulator circuit of Nork is not able to perform step-up and step-down conversion in the opposite direction using the same terminals—i.e., from node V_{out} to node V_{in} . Thus, in contrast to Applicants' invention of Claims 23 and 29, Nork is wholly incapable "for functioning in a step-up/step-down operation and, without changing the connection among the plurality of terminals, for functioning in a step-down/step-up operation." As such, Nork does not anticipate Applicants' Claims 23 and 29.

For at least the reasons discussed above, Applicants respectfully request that the rejection of Claims 23 and 29 under 35 U.S.C. § 102(b) be withdrawn and these claims be allowed. Furthermore, because each of Claims 24-28 and 30-33 depend from one of Claims 23 and 29 and include further limitations, Applicants respectfully request that the rejection of these dependent claims under 35 U.S.C. § 102(b) also be withdrawn and the claims be allowed.

Applicants' Claim 38 recites, "A fractional switch for connection between a first node and a second node, the fractional switch comprising a plurality of segments connectable in parallel between the first and second nodes, each segment operable to be individually turned on and off, wherein the number of segments which are turned on at a given moment is varied depending on loading conditions between the first and second nodes." This is not disclosed or taught by Nork.

Nork does not disclose any "fractional switch," much less, one "for connection between a first node and a second node, the fractional switch comprising a plurality of segments connectable in parallel between the first and second nodes, each segment operable to be individually turned on and off, wherein the number of segments which are turned on at a given moment is varied depending on loading conditions between the first and second nodes," as recited in Claim 38. As such, Nork does not anticipate Applicants' Claim 38.

For at least the reasons discussed above, Applicants respectfully request that the rejection of Claim 38 under 35 U.S.C. § 102(b) be withdrawn and this claim be allowed.

Furthermore, because each of Claims 39-41 depend from Claim 38 and include further limitations, Applicants respectfully request that the rejection of these dependent claims under 35 U.S.C. § 102(b) also be withdrawn and the claims be allowed.

Applicants' Claim 42 recites, "A fractional switch for adjusting the flow of current between a first node and a second node, the fractional switch comprising: a first transistor connected between the first and second nodes, the first transistor having a first size; a second transistor connected between the first and second nodes, the second transistor having a second size which is larger than the first size; and a third transistor connected between the first and second nodes, the third transistor having a third size which is larger than the second size; wherein the first, second, and third transistors are operable to be individually turned on and off depending on loading conditions between the first and second nodes." As discussed above, Nork does not disclose any fractional switch whatsoever. Accordingly, Nork does not anticipate Applicants' Claim 42.

For at least the reasons discussed above, Applicants respectfully request that the rejection of Claim 42 under 35 U.S.C. § 102(b) be withdrawn and this claim be allowed.

CONCLUSION

Applicants respectfully request that the pending claims be allowed and the case passed to issue. Should the Examiner wish to discuss the Application, it is requested that the Examiner contact the undersigned at (415) 772-1200.

EXPRESS MAIL LABEL NO.:
EV 305 258 320 US

Respectfully submitted,

By:



Philip W. Woo
Attorney of Record
Registration No. 39,880
PWW/rp

July 15, 2004

SIDLEY AUSTIN BROWN & WOOD LLP
555 California Street, Suite 5000
San Francisco, CA 94104-1715
(415) 772-7200